

Appl. No. : 10/020,140
Filed : December 14, 2001

AMENDMENTS TO THE CLAIMS

1. - 12. (Cancelled)

13. (Previously Presented) An optical bio-disc for measuring the presence of an analyte in a sample, said bio-disc comprising :

a first chamber comprising amplification agents bound to a first surface by first reversible bonds, wherein said first reversible bonds are configured to be broken when said amplification agents are contacted by said analyte;

a second chamber fluidly connected to said first chamber and comprising detection agents bound to a second surface by second reversible bonds, wherein the strength of the second reversible bonds are altered upon contact by said amplification agents; and

wherein a single amplification agent is adapted to alter the strength of more than one of said second reversible bonds, and wherein altering the strength of said second reversible bonds results in a change from a negative to a positive detection state of said detection agents indicating the presence of said analyte.

14. (Previously Presented) An optical disk-based detection system according to claim 13, wherein said first reversible bonds comprise DNA.

15. (Previously Presented) An optical disk-based detection system according to claim 13, wherein said second reversible bonds comprise DNA.

16. (Previously Presented) An optical disk-based detection system according to claim 13, wherein said single amplification reagent is adapted to break said second reversible bonds and release said detection agents in order to indicate the presence of said analyte.

17. (Previously Presented) An optical disk-based detection system according to claim 13, wherein said single amplification reagent is adapted to strengthen said second reversible bonds to prevent release of said detection agents in order to indicate the presence of said analyte.

18. (Previously Presented) An optical disk-based detection system according to claim 13, wherein said amplification agents comprise DNA ligase.

19. (Previously Presented) An optical disk-based detection system according to claim 18, wherein said analyte comprises a target DNA molecule and said amplification agents comprise DNA ligase linked to a DNA segment capable of hybridizing to said analyte.

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20. (Previously Presented) An optical disk-based detection system according to claim 19, wherein said second reversible bonds comprise nicked DNA, and wherein said DNA ligase is capable of repairing said nicked DNA in order to strengthen said second reversible bonds.